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from starting isocyanate monomers in which the isocyanate groups are borne by sp^3 carbon atoms, comprising the step of heating a starting reaction medium comprising said isocyanate monomers, in the absence of a dimerization catalyst, to a temperature of at least 50°C and of not more than 200°C for a period of not more than 24 hours.

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48. (Amended) A process for the preparation of a low-viscosity polyfunctional isocyanate composition containing at least one isocyanate trimer containing an isocyanurate unit and/or at least one compound containing a biuret unit and at least one isocyanate dimer containing a uretidinedione unit, from starting isocyanate monomers, in which the isocyanate groups are borne by sp^3 carbon atoms, and optionally from other monomers, this process comprising the following steps:

- i) heating the starting reaction medium, in the absence of dimerization catalyst, to a temperature of at least 80°C , and of not more than 200°C , for a period of less than 24 hours;
- ii) reacting the reaction product from step i) containing unreacted monomers with a (cyclo)condensation catalyst, under (cyclo)trimerization conditions;
- iii) removing the unreacted starting monomers from the reaction product from step ii); and
- iv) isolating the low-viscosity polyfunctional isocyanate composition comprising at least one isocyanate trimer and/or biuret compound and at least one isocyanate dimer.

49. (Amended) A process for the preparation of a low-viscosity polyfunctional isocyanate composition containing at least one isocyanate trimer containing an isocyanurate unit and/or at least one compound containing a biuret unit and at least one isocyanate dimer containing a uretidinedione unit, from starting isocyanate monomers, in which the isocyanate groups are borne by sp^3 carbon atoms, and optionally from other monomers, this process comprising the following steps:

- B2
- i) heating the starting reaction medium, in the absence of dimerization catalyst, to a temperature of at least 120°C , and of not more than 170°C , for a period of less than 5 hours;
 - ii) reacting the reaction product from step i) containing unreacted monomers with a (cyclo)condensation catalyst, under (cyclo)trimerization conditions;
 - iii) removing the unreacted starting monomers from the reaction product from step ii); and
 - iv) isolating the low-viscosity polyfunctional isocyanate composition comprising at least one isocyanate trimer and/or biuret compound and at least one isocyanate dimer.

50. (Amended) A process for the preparation of a low-viscosity polyfunctional isocyanate composition containing at least one isocyanate trimer containing an isocyanurate unit and/or at least one compound containing a biuret unit and at least one isocyanate dimer containing a uretidinedione unit, from starting isocyanate monomers in which the isocyanate groups are borne by sp^3 carbon atoms, and optionally from other monomers, this process comprising the following steps:

- B2
- i) reacting the starting monomers with a (cyclo)trimerization or (cyclo)condensation catalyst under (cyclo)trimerization or (cyclo)condensation conditions;
 - ii) heating the reaction product from step i) containing unreacted isocyanate monomers, in the absence of dimerization catalyst, to a temperature of at least 80°C, and of not more than 200°C, for a period of less than 24 hours;
 - iii) removing the unreacted starting monomers from the reaction product from step ii); and
 - iv) isolating the low-viscosity polyfunctional isocyanate composition comprising at least one isocyanate trimer and/or biuret compound and at least one isocyanate dimer.

51. (Amended) A process for the preparation of a low-viscosity polyfunctional isocyanate composition containing at least one isocyanate trimer containing an isocyanurate unit and/or at least one compound containing a biuret unit and at least one isocyanate dimer containing a uretidinedione unit, from starting isocyanate monomers in which the isocyanate groups are borne by sp^3 carbon atoms, and optionally from other monomers, this process comprising the following steps:

- i) reacting the starting monomers with a (cyclo)trimerization or (cyclo)condensation catalyst under (cyclo)trimerization or (cyclo)condensation conditions;
- ii) heating the reaction product from step i) containing unreacted isocyanate monomers, in the absence of dimerization catalyst, to a temperature of at least 120°C, and of not more than 170°C, for a period of less than 5 hours;

~~iii) removing the unreacted starting monomers from the reaction product from step ii); and~~
~~iv) isolating the low-viscosity polyfunctional isocyanate composition comprising at least one isocyanate trimer and/or biuret compound and at least one isocyanate dimer.~~

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52. (Amended) A process for the preparation of a low-viscosity polyfunctional isocyanate composition comprising at least one isocyanate dimer containing a uretidinedione unit and at least one other compound having a function derived from the isocyanate function, from starting isocyanate monomers in which the isocyanate groups are borne by sp^3 carbon atoms and another compound comprising at least one function other than isocyanate, which is reactive with the isocyanate function, this process comprising the following steps:

i) heating the starting reaction medium, in the absence of dimerization catalyst, to a temperature of greater than at least 80°C , and less than at least 200°C , for a period of less than 24 hours;

ii) reacting together the reaction product from step i) containing unreacted isocyanate monomers and a compound comprising at least one function other than the isocyanate function, which is reactive with the isocyanate function, optionally in the presence of a catalyst;

iii) removing from the reaction product from step ii) the isocyanate monomers and, optionally, the compound comprising at least one function other than the isocyanate function, which is reactive with the isocyanate function; and

iv) isolating the polyfunctional isocyanate composition of low-viscosity comprising at least one isocyanate dimer containing a uretidinedione unit and at least one other function derived from the isocyanate function.

B2 53. (Amended) A process for the preparation of a low-viscosity polyisocyanate composition comprising at least one isocyanate dimer containing a uretidinedione unit and at least one other compound containing a function derived from the isocyanate function, starting with isocyanate monomers in which the isocyanate groups are borne by sp^3 carbon atoms and with another compound comprising at least one function other than isocyanate, which is reactive with the isocyanate function, this process comprising the following steps:

- (i) reacting an isocyanate monomer with a compound comprising at least one function other than an isocyanate function, which is reactive with the isocyanate function, optionally in the presence of a catalyst;
- ii) heating the reaction mixture from step i) containing unreacted isocyanate monomers, in the absence of dimerization catalyst, to a temperature of greater than at least 80°C , and not more than 200°C , for a period of less than 24 hours;
- iii) removing from the reaction product from step ii) the monomers and, optionally, the compound comprising at least one function other than the isocyanate function, which is reactive with the isocyanate function; and
- iv) isolating the low-viscosity polyisocyanate composition.

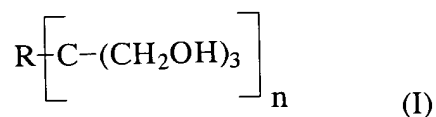
B2 54. (Amended) A process for the preparation of a low-viscosity polyfunctional isocyanate composition comprising at least one isocyanate dimer containing a uretidinedione unit and at least one other compound having a function derived from the isocyanate function, from starting isocyanate monomers in which the isocyanate groups are borne by sp^3 carbon atoms and another compound comprising at least one function other than isocyanate, which is reactive with the isocyanate function, this process comprising the following steps:

- i) reacting an isocyanate monomer with a compound comprising at least one function other than an isocyanate function, which is reactive with the isocyanate function, optionally in the presence of a catalyst;
 - ii) heating the reaction mixture from step i) containing unreacted isocyanate monomers, in the absence of dimerization catalyst, to a temperature of greater than at least 120°C , and not more than 170°C , for a period of less than 5 hours;
 - iii) removing from the reaction product from step ii) the monomers and, optionally, the compound comprising at least one function other than the isocyanate function, which is reactive with the isocyanate function; and
 - iv) isolating the low-viscosity polyisocyanate composition.
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B3 59. (Amended) A process for the preparation of a low-viscosity (poly)isocyanate composition comprising at least one isocyanate dimer containing a uretidinedione unit, from starting isocyanate monomers in which the isocyanate groups are borne by sp^3 carbon atoms, comprising the step of heating a starting reaction medium comprising said

isocyanate monomers, in the absence of a dimerization catalyst, to a temperature of at least 50°C and of not more than 200°C for a period of not more than 24 hours, the reaction medium containing the starting monomers also containing a compound of general formula

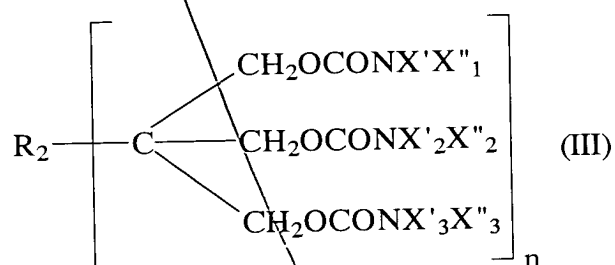
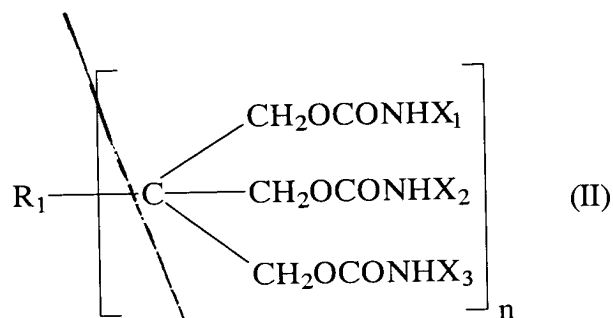
I:



in which

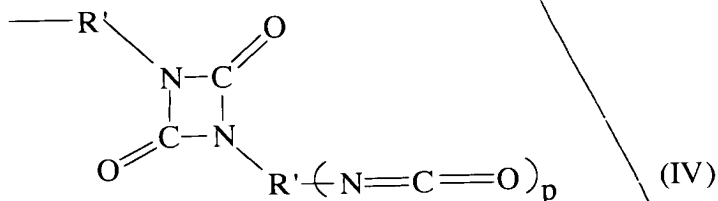
R is a mono- or n-valent hydrocarbon group having from 1 to 30 carbon atoms, in which the hydrocarbon chain optionally is interrupted by one or more chalcogen atoms and optionally, bears 1 to 3 OH groups, and n is an integer ranging from 1 to 3, said composition optionally containing products derived from reaction of said compound of formula I with a compound bearing an aliphatic isocyanate function.

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60. (Amended) A process according to claim 59, comprising adding to the reaction medium containing the starting monomers a compound of general formula II and/or III below:



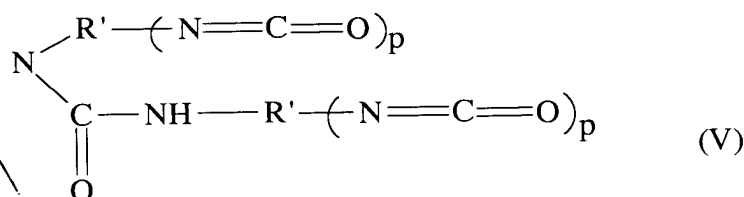
in which

one or more of X_1 , X_2 and X_3 represents a group $R'-(N=C=O)_p$ in which R' is a p-valent aliphatic group and p is an integer ranging from 0 to 5, the others representing, a group of formula

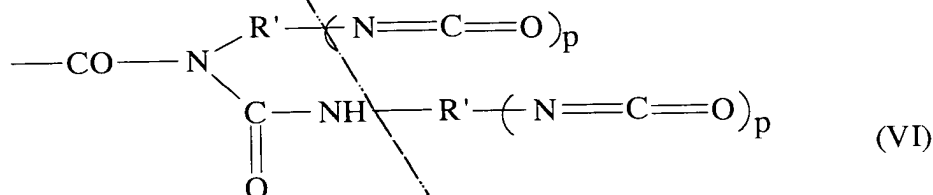


R_1 is a mono-or n-valent hydrocarbon group having 1 to 30 carbon atoms, in which the hydrocarbon chain optionally is interrupted by one or more chalcogen atoms and optionally, bears 1 to 3 OH groups, with the OH groups optionally substituted, with a

group CONX_1H , X_1 being as defined above, at least one of $\text{NX}'_1\text{X}''_1$, $\text{NX}'_2\text{X}''_2$ and $\text{NX}'_3\text{X}''_3$ represents the group,



the others representing a group NX_1H or NX_1 -silyl and R_2 being a mono or n-valent hydrocarbon group having 1 to 30 carbon atoms, in which the hydrocarbon chain optionally is interrupted by one or more chalcogen atoms and optionally, bears 1 to 3 OH groups, with the OH groups optionally substituted, with a group CONX_1H , or



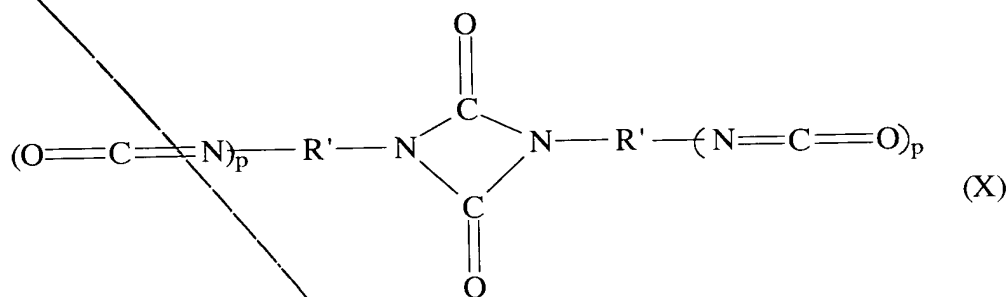
and n is an integer ranging from 1 to 3.

62. (Amended) A process according to Claim 60, wherein said compound of general formula I is selected from pentaerythritol and trimethylolpropane, and the compounds of general formulae II and III are selected from the corresponding pentaerythritol and trimethylolpropane derivatives of general formula II and/or III wherein R_1 and/or R_2 represents a group selected from CH_2OH and CH_3CH_2 .

64. (Amended) A low-viscosity polyfunctional isocyanate composition comprising at least one uretidinedione isocyanate dimer and at least one compound having a biuret function, wherein said biuret unit containing compound represents at least 10% by weight based on the weight of the composition.

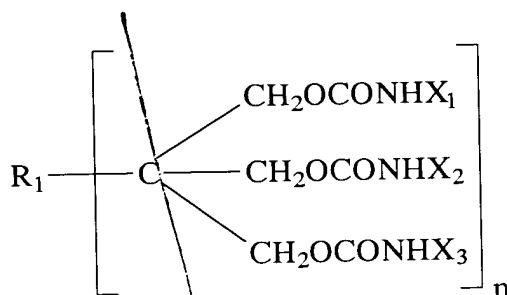
65. (Amended) A low-viscosity polyfunctional isocyanate composition comprising at least one uretidinedione isocyanate dimer and at least one compound having a biuret function, wherein said biuret unit containing compound represents at least 20% by weight based on the weight of the composition.

66. (Amended) A composition comprising at least one compound of general formula X:

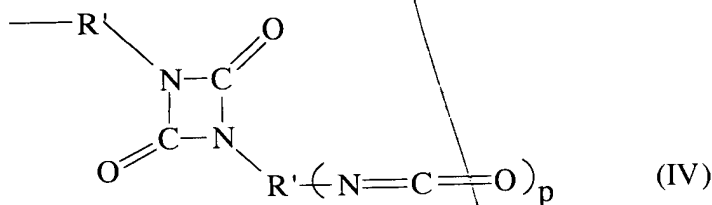


in which R' is a p-valent aliphatic group and p is an integer ranging from 0 to 5, and at least one compound of general formula II:

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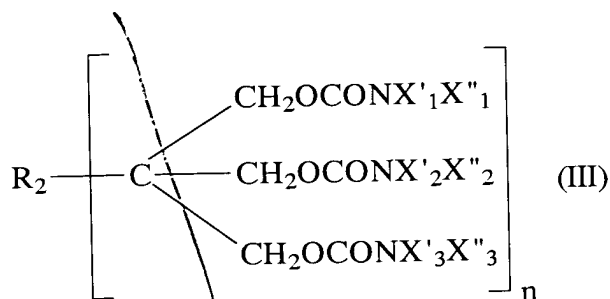
in which one or more of X_1 , X_2 and X_3 represents a group $-R'-N=C=O$ and the others represent, a group



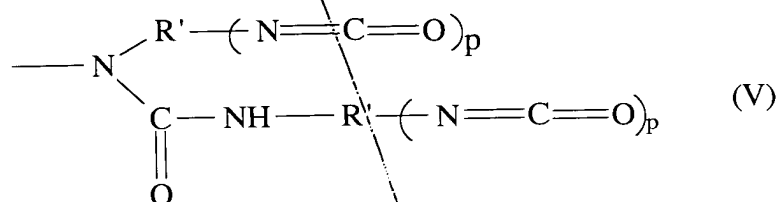
and R_1 is a mono- or n-valent hydrocarbon group having 1 to 30 carbon atoms, in which the hydrocarbon chain optionally is interrupted by one or more chalcogen atoms and optionally bears 1 to 3 OH group, with the OH groups optionally substituted with a group CONX_1H wherein X_1 represents $R'(-N=C=O)_p$

and n is an integer from 1 to 3;

and/or at least one compound of general formula III:

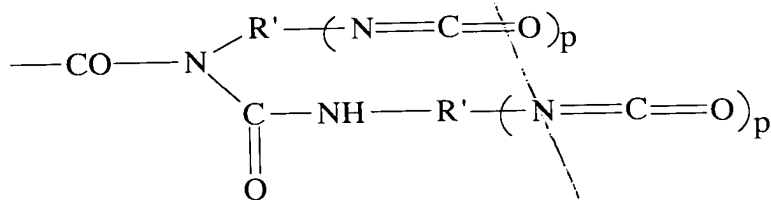


in which at least one of $NX'_1X''_1$, $NX'_2X''_2$ and $NX'_3X''_3$ represents the group,

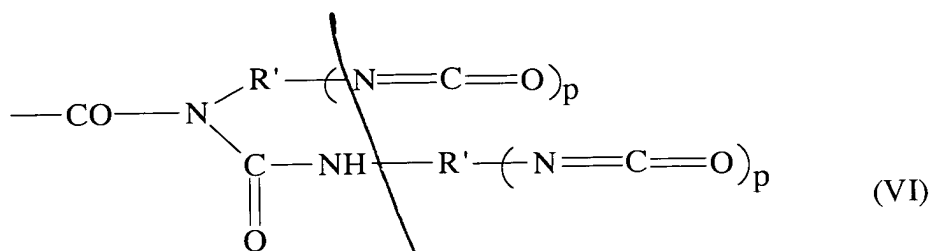


the others representing a group NX_1H and

R_2 being a mono- or n-valent hydrocarbon group having 1 to 30 carbon atoms, in which the hydrocarbon chain optionally is interrupted by one or more chalcogen atoms and optionally, bears 1 to 3 OH groups, with the OH groups substituted with a group $CONX_1H$ or

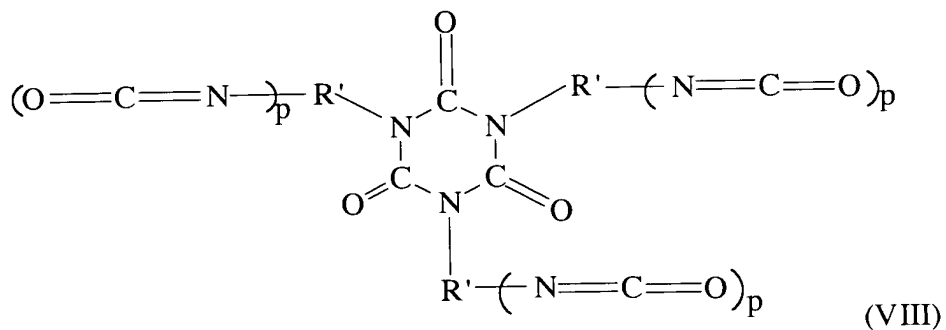


and/or a biuret compound obtained from an isocyanate of general formula VI



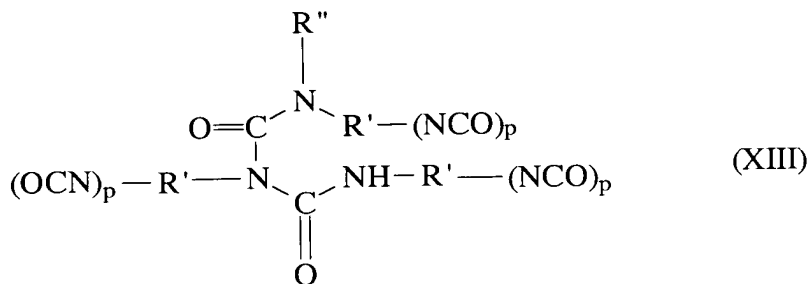
said composition further being free of dimerization catalyst selected from phosphine, aminopyridine, phosphoramidate, organometallic or tertiary amine.

67. (Amended) A composition according to Claim 66, further comprising a compound of general formula VIII:



and/or a compound of general formula XIII:

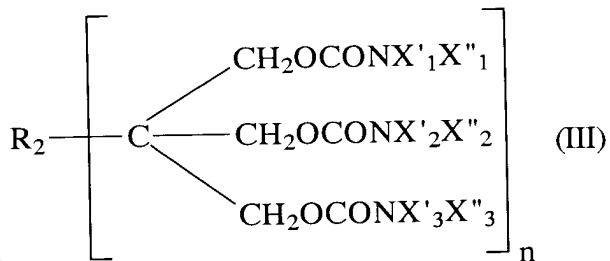
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wherein R'' represents H or a hydrocarbon group.

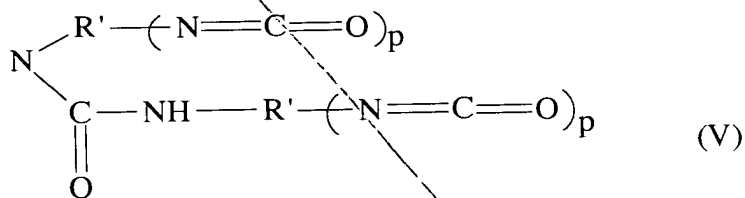
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69. (Amended) A compound of general formula III



in which

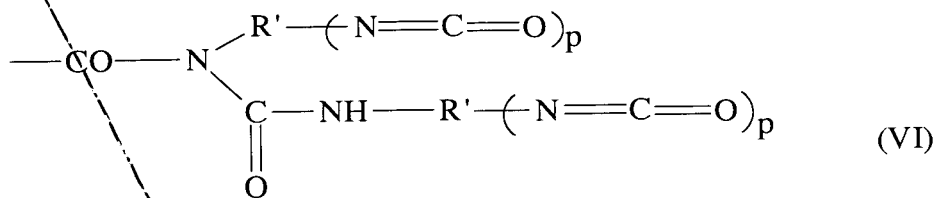
at least one of NX'₁X''₁, NX'₂X''₂ and NX'₃X''₃ represents the group



in which R' is a p-valent aliphatic group and p is an integer ranging from 0 to 5, the others representing a group NX₁H with X₁ representing a group R'-(N=C=O)_p and R₂ being a mono- or p-valent hydrocarbon group having 1 to 30 carbon atoms in which the

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hydrocarbon chain optionally is interrupted by one or more chalcogen atoms and optionally bears 1 to 3 OH groups, with the OH groups optionally substituted with a group CONX_1H ,
or

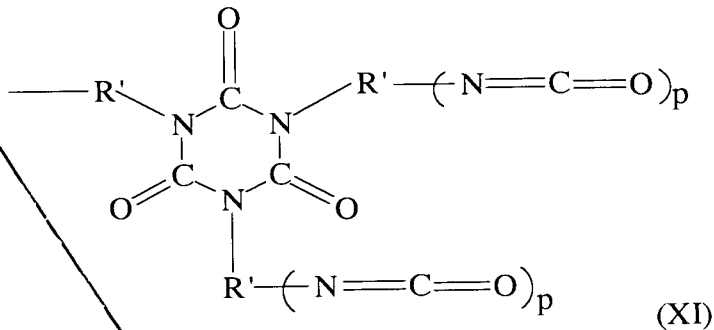


and

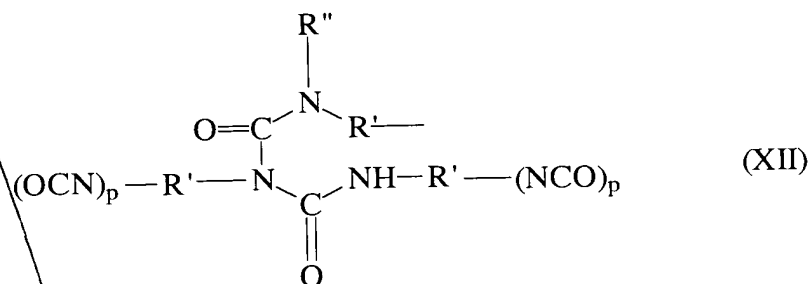
n is an integer ranging from 1 to 3.

70. (Amended) A compound according to Claim 69 in which:

- the groups $\text{NX}'_1\text{X}''_1$, $\text{NX}'_2\text{X}''_2$ and $\text{NX}'_3\text{X}''_3$ are selected from a group of general formula NX_1H , a group of general formula V, a uretidinedione group of formula IV, an isocyanurate group of formula XI:



and, a biuret group of formula ~~XIX~~



R'' represents H or a hydrocarbon group, wherein the optional OH groups in R₂ are optionally substituted with a group selected from CONHX₁, a group of formula VI, a group of formula IV, a group of formula XI or a group of formula XII, with the proviso that the compounds containing at least one carbamate group of formula NX₁H, or CONHX₁H respectively, and/or allophanate group of formula V, or group of formula V respectively, also contain at least one group selected from a uretidinedione group of general formula IV, or group of general formula IV, respectively, an isocyanurate group of general formula XI, or group of general formula XI respectively, and a biuret group of general formula XII, or group of general formula XII respectively.

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C6 72. (Amended) A compound according to Claim 69, wherein R' is selected from a group (CH₂)_n with n ranging from 2 to 8, optionally substituted with a hydrocarbon chain optionally bearing an isocyanate function, a norbornylmethylene group, a cyclohexylmethylene group or a 3,3,5-trimethylcyclohexyl methylene group.

73. (Amended) A composition comprising:

- at least one polyisocyanate composition according to Claim 65; and
- a polyol.

74. (Amended) A composition comprising:

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- at least one polyisocyanate composition according to Claim 65; and
 - an acrylate polyol which satisfies the following conditions for a dry extract:
 - Mw (weight-average molecular weight) not greater than 10,000;
 - Mn (number-average molecular weight) of not greater than 5000;
 - Mw/Mn (dispersity ratio) of not greater than 5;
 - number of OHs/molecule of greater than or equal to 2.

75. (Amended) A composition for simultaneous or successive application, comprising:

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- at least one polyisocyanate composition according to Claim 65; and
 - a polyester polyol having a viscosity of not greater than 10,000 mPa.s, and an Mw of between 250 and 8000.
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